Top Secret

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DIRECTORATE OF
INTELLIGENCE

Industrial Facilities
(Non-Military)

Basic Imagery Interpretation Report

Ko-la-ma-i Petroleum Refinery

Ko-la-ma-i, China

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DATE DECEMBER 1969
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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
Imagery Analysis Service

INSTALLATION OR ACTIVITY NAME		COUNTRY
Ko-la-ma-i Petroleum Refinery		CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	[redacted] 25X1
45TUL410490	45-34-05N 084-57-55E	
MAP REFERENCE		
548th RTS. USATC, Series 200, Sheet M0243-17HL, 1st ed., Dec 66, Scale 1:200,000 (SECRET [redacted] 25X1		
LATEST IMAGERY USED	NEGATION DATE (If required)	
[redacted]	NA	25X1

ABSTRACT

A detailed photographic analysis of the Ko-la-ma-i Petroleum Refinery in China shows that the major components of the refinery consist of crude oil distillation units, a stabilization unit, a probable treating unit, and a possible deasphalting unit. The primary products of the refinery are straight-run gasoline, kerosene, diesel and fuel oils, and possibly asphalt.

This report covers the period from September 1961 to August 1969. In September 1961, the refinery contained several oil or water storage basins and a few storage tanks. By March 1965, the primary distillation units and most of the storage tanks were installed or under construction. In February 1967, a probable treating unit and a possible deasphalting unit were complete. By September 1968 a crude oil stabilization unit was complete. An unidentified processing facility was still under construction in August 1969.

The refinery was first observed in operation on photography of February 1967. Since that time, indications of activity have been minimal, suggesting a low level of operation. Smoke or steam has been observed only in a small completed portion of the unidentified processing facility.

This report includes a photograph and a detailed line drawing of the plant, a chronological summary of construction and operational status, and a tabular listing of facilities and equipment including dimensions of storage tanks.

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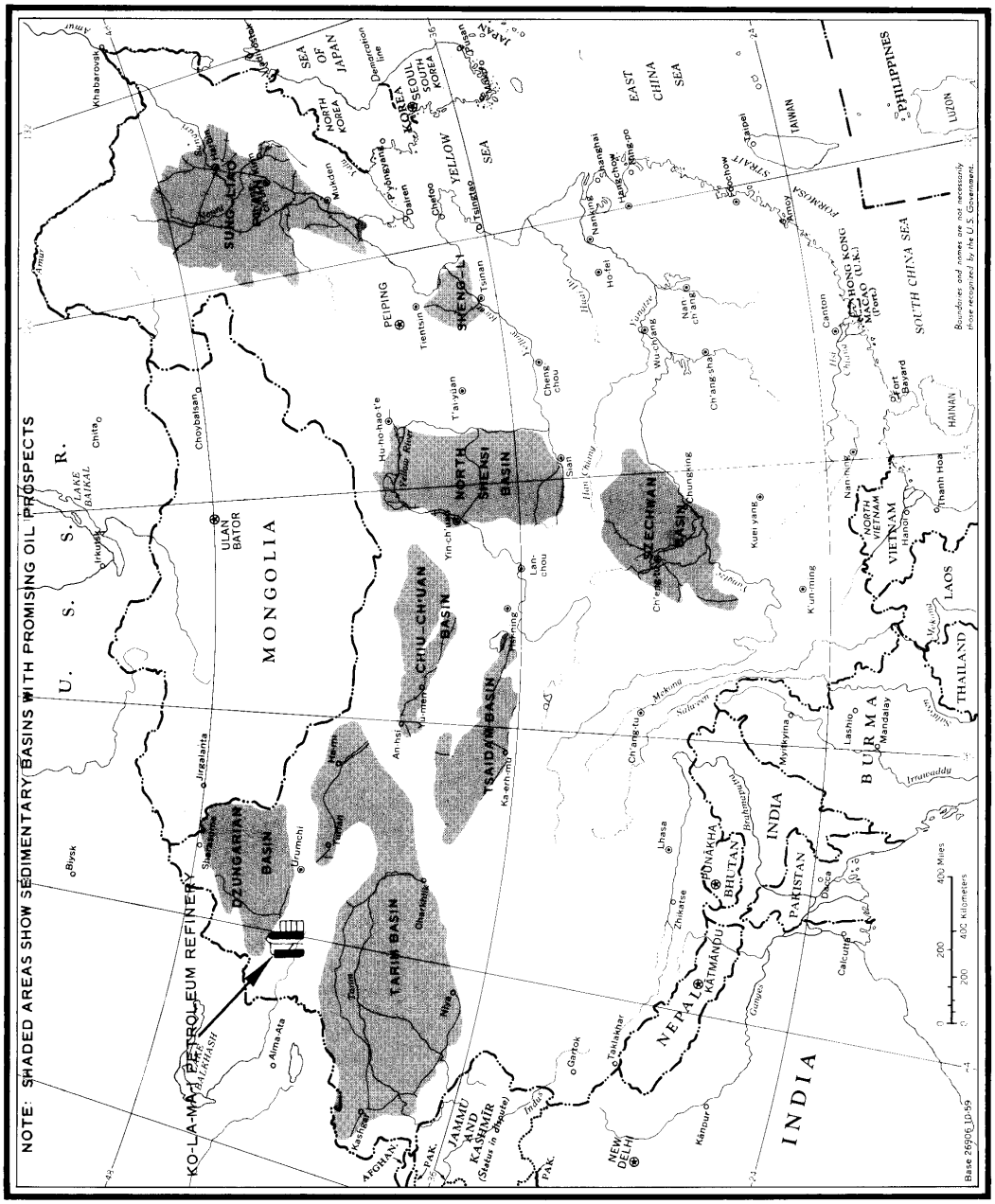

FIGURE 1. LOCATION MAP.

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INTRODUCTION

The Ko-la-ma-i Petroleum Refinery is in the Sinkiang Uighur Autonomous Region (see Figure 1). It is approximately 5 nautical miles (nm) east-southeast of the town of Ko-la-ma-i and 4 nm east of the Ko-la-ma-i Airfield [redacted]. A thermal power plant is located 5 nm north-northeast, and an electric substation is 0.5 nm west of the refinery. Crude oil for charging the refinery is obtained from the adjacent Ko-la-ma-i oil field. A pipeline connects the refinery and the oil field to the Tu-shan-tzu Petroleum Refinery [redacted], about 100 nm to the south.

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BASIC DESCRIPTION

Physical Features

The refinery and support area occupy a 400-acre irregular-shaped area approximately 9,000 by 1,800 feet (see Figures 2 and 3). The only security measures observed are numerous trenches with weapons positions around the plant area. The refinery is served by an all-weather road.

Operational Functions

The refinery accomplishes primary distillation of crude oil and possibly a limited amount of secondary processing. The major components of the refinery are indicated in Figure 3 and Table 1.

After the crude oil is brought to the refinery, water is removed in a dehydration unit and gas is removed in a stabilization unit. Facilities for the fractionation of crude oil include an atmospheric and a vacuum column and possibly a shell still. The products resulting from the primary distillation are then improved and purified in a probable treating facility. A possible deasphalting unit may provide asphalt for use in surfacing roads in this remote area.

On the basis of the facilities identified, the products of the refinery are straight-run gasoline, kerosene, diesel and fuel oils, and possibly asphalt.

Status and Activity

The earliest photography of the refinery area used in this study is from September 1961. At that time, several oil or water storage basins and two storage tanks were the only facilities observed. On poor-quality photography of May 1962, the refining area appeared to be under construction and crude oil storage facilities and several additional oil or water storage basins were observed. On coverage of March 1965, the primary distillation units and most of the storage tanks were installed or under construction. A probable treating unit and a possible deasphalting unit were under construction in March 1965 and were complete in February 1967. A crude oil stabilization unit, consisting of four gas-oil separators and associated storage tanks, was under construction in February 1967 and was complete in September 1968. An unidentified processing facility was still under construction in August 1969.

Operational Status

The installation of refining equipment for primary distillation appeared to be complete or nearing completion by March 1965, but no smoke or steam was seen coming from the processing units. On photography of February 1967, indications of activity included steam from the stack of the possible steamplant and heavy smoke from the possible shell still. Since that time, indications of operation have been minimal. Smoke or steam has been observed only in a small completed portion of the unidentified processing facility.

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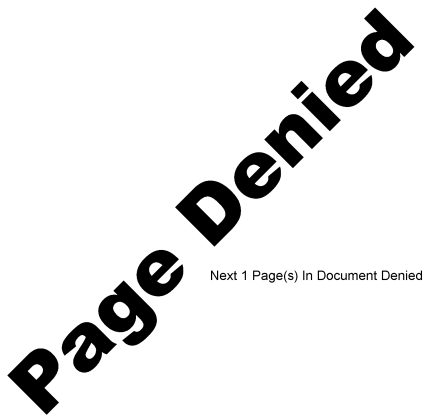

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Table I. Data on Facilities in the Ko-la-ma-i Petroleum Refinery (keyed to Figure 3).

Area	Functional Description	Equipment and Facilities*
A	Packing and Shipping	22 Storage/packing buildings 10 Cylindrical tanks 7 20-foot-diam. 1 15-foot-diam. 2 10-foot-diam.
B	Finished Products Storage	1 Storage/support building 46 Cylindrical tanks 2 45-foot-diam. 2 40-foot-diam. 6 35-foot-diam. 6 30-foot-diam. 16 25-foot-diam. 13 20-foot-diam. 1 15-foot-diam.
C	Probable Treating	1 Processing building 4 Storage/support buildings 10 Probable treating tanks 4 25-foot-diam. 6 20-foot-diam. 2 Cylindrical tanks 20-foot-diam.
D	Possible Deasphalting	1 Bank of processing columns 1 Pipe furnace 2 Processing buildings 2 Support buildings 15 Cylindrical tanks 1 25-foot-diam. 5 20-foot-diam. 5 15-foot-diam. 4 10-foot-diam.
E	Crude Oil Distillation	1 Fractionating unit with 4 columns (including 1 atmospheric and 1 vacuum [fractionating] column) 2 pipe furnaces 2 banks of cooling coils/heat exchangers/accumulators 2 compressor buildings 2 support buildings 4 Cylindrical tanks 10-foot-diam. 7 Horizontal tanks
F	Unidentified Processing Under Construction	1 Bank of processing equipment 1 Possible furnace 1 Possible furnace under construction 4 Probable processing units under construction 1 Compressor building 5 Support buildings 2 Cylindrical tanks 15-foot-diam.
G	Possible Shell Still	1 Possible 10-bank shell still 2 Support buildings 4 Cylindrical tanks 1 25-foot-diam. 3 20-foot-diam.

Area	Functional Description	Equipment and Facilities*
H	Crude Oil Storage	1 Overhead loading facility 1 Probable overhead loading facility 7 Probable gas-oil separators 15 Support buildings 2 Oil or water storage basins 22 Cylindrical tanks 1 80-foot-diam. 1 55-foot-diam. 4 40-foot-diam. 7 30-foot-diam. 4 25-foot-diam. 2 20-foot-diam. 2 15-foot-diam. 1 10-foot-diam. 2 Semiburied tanks 55-foot-diam. 1 Semiburied tank 40-foot-diam.
I	Cooling Facilities	2 Cooling towers 2 Support buildings
J	Storage and Support	18 Storage/support buildings 1 Water or oil basin under construction 6 Cylindrical tanks 25-foot-diam. 4 Horizontal tanks
K	Crude Oil Storage	2 Overhead loading facilities 22 Support buildings 1 Support building under construction 1 Probable steamplant 5 Cylindrical tanks 4 70-foot-diam. 1 20-foot-diam. 2 Semiburied reservoirs 150 by 150 ft. 8 Semiburied reservoirs 120 by 110 ft. 1 Small probable semiburied reservoir under construction 3 Semiburied tanks 1 55-foot-diam. 1 30-foot-diam. 1 25-foot-diam. 2 Tank bases
L	Crude Oil Dehydration	6 Dehydration units 1 Probable stabilization unit with 1 stabilization tower 2 probable pipe furnaces 2 Compressor-type buildings 8 Support buildings 6 Cylindrical tanks 3 40-foot-diam. 2 35-foot-diam. 1 15-foot-diam. 1 Semiburied tank 55-foot-diam.

Area	Functional Description	Equipment and Facilities*
M	Crude Oil Stabilization	1 Stabilization unit with 4 gas-oil separators 3 Support buildings 1 Building under construction 1 Water or oil basin under construction 10 Cylindrical tanks 2 30-foot-diam. 3 25-foot-diam. 1 20-foot-diam. 4 15-foot-diam.

*Dimensions are approximate.

REFERENCES

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Map

548th RTS. US Air Target Chart, Series 200, Sheet M0243-17HL, 1st edition, December 1966, Scale 1:200,000 (SECRET/ 25X1
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Requirement

COMIREX NO2

Support Number 42011S

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